

## Mental health problems, ways of coping and internet addiction among adolescents

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### ABSTRACT

Due to advancement and availability of technology, an excessive usage of internet among adolescents has been noticed which has become the major concern and challenge not only in India but across the nations. As a result of indiscriminate use of internet, Internet Addiction Disorder (IAD) has been included in the latest medical and psychological literature. Recent researches have shown the adverse effects of internet addiction on mental health and coping strategies among adolescents which in turn affects their academic, personal and social life (Busari, 2016; Dutta, 2016; Michelle & Einar, 2017). Hence, the aim of the present study was to see the extent and intensity of internet addiction and its relation with the mental health and ways of coping among the adolescent students. The sample of the study was 346 students from 9th-12th grade from private schools of Delhi NCR. The tools included were Young's Internet Addiction Test (IAT), Depression Anxiety Stress Scales (DASS) and Ways of Coping Questionnaire (WAYS). The data is analysed by using correlation and 't' test. Findings suggest only 35.83% of adolescents are showing normal internet usage and remaining 64.17% adolescents falls under mild to moderate level of internet addiction which is a cause for concern. Good mental health is correlated with low level of internet addiction whereas maladaptive ways of coping shows high level of internet addiction. The findings have implications for designing interventions to improve the mental health and adaptive ways of coping among adolescent students.

**Keywords:** *Internet Addiction, Mental Health, Coping, Anxiety, Stress, Depression*

Technology has made a tremendous progress and a great impact on our day to day life. With an advancement of technology, internet has intruded the life of every human being in some or other way, more so of adolescents. It's not the usage of internet but an excessive use of internet among adolescents which has become the major concern and challenge not only in India but across the nations.

In spite of its importance and usefulness, researches have indicated that too much use of internet can cause lots of psychological and mental problems such as anxiety, stress, and depression, along with academic, emotional and behavioural issues among adolescents

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(Bernardi & Pallanti, 2009; Busari, 2016; Chen & Peng, 2008; Dutta, 2016; Michelle & Einar, 2017). So here, the question is of over usage or too much usage. Thus, the over use of internet means the compulsive use of internet which significantly consumes time and affects the adolescents' school and/or domestic work, their interaction and relationship with significant people such as parents, siblings, teachers, friends, etc. Some of the examples and activities of internet overuse may include using Facebook, Instagram, snapchat, etc. playing online video games like PUBG, or visiting sexually illicit videos or songs or pornographic sites, etc.

Internet addiction disorder (IAD) is called so because in this, population using internet experiences some negative consequences due to its excessive use, as well as symptoms that can mirror an addiction. It is known by different names, such as Block (2008) called it Compulsive Internet Use (CIU) whereas Ah and Jeong (2011) named it as Problematic Internet Use (PIU). Some others refer it as Internet overuse, problematic computer use, pathological computer use disorder, or refer to excessive computer use which interferes with their daily life (Bernardi & Pallanti, 2009). However, some of the researchers believe that an individual's use of the internet is a behavioural manifestation of other challenges in their lives, and thus, not sure of the fact of existence of this disorder (Thatcher, Wretschko & Fridjhon, 2008; Frangos & Frangos, Kiohos, 2010).

Research has shown that there is a relation between internet addiction and mental health disorder. There are number of mental health problems which are on rise due to internet addiction such as shyness, loneliness, isolation, low self-confidence, anxiety, depression, sociophobia, and having problem in learning and education (Michelle & Einar, 2017; Morrison & Gore, 2010; Wiseman, Curtis & Foster, 2015). The trend is growing up in Asian as well as Indian students (Gupta, Khan, Rajoura, & Srivastava, 2018; Anand, Jain, Prabhu, Thomas, et.al. 2018; Maheshwari, & Sharma, 2018).

Holistic development cannot be achieved without mental health. The World Health Organization (WHO, 2004) defines mental health as "a state of well-being in which the individual realizes his or abilities, can cope with the normal stresses of life, can work on her own productively and fruitfully, and is able to make a contribution to his or her community". According to World Health Organisation (WHO, India 2020), "Mental health is an integral part of health and is more than the absence of mental illnesses. It refers to a broad array of activities directly or indirectly related to the mental well-being, prevention of mental disorders, and treatment and rehabilitation of people affected by mental disorders".

Numerous studies show that mental health problems are significantly affecting a large number of children and adolescents and escalating worldwide. It is estimated that around 20% of the world's adolescents have a mental health or behavioural problem. Upto 50% of mental, psychological, and behavioural problems have their onset during adolescence period (Kessler, Berglund, Demler, Jin, Merikangas, et al., 2005). The level of stress and anxiety has increased manifolds among children and adolescents of today's generations. Therefore, it becomes imperative to empower the children and adolescents with adaptive skills to deal with mental health issues. To address this issue, interventions need to be planned and executed to raise the awareness about mental health issues and organize efforts should be taken to promote mental health and prevent mental health problems.

Internet use can also be viewed as a coping response to emotional or social difficulties (Bernardi & Pallanti, 2009). Internet addiction may occur when Internet activities are used

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to cope with negative affect (Young, 1998). When Internet activities are used excessively to cope with negative affective states (e.g. depression or anxiety), and alternate means of coping responses are diminished (e.g., social support, health promoting behaviour), individuals may find themselves relying on online activities to avoid negative feelings, possibly leading to Internet Addiction and could be a risk factor for Internet Addiction (Mu"ller, Glaesmer, & Bra"bler, 2013). Furthermore, coping responses affect the well-being and psychopathology (Roger, Jarvis, & Najarian, 1993). Therefore, the current study explores the extent of Internet addiction, depression, anxiety, stress and ways of coping and relationship among these factors.

### ***Rationale of the study***

Review of literature indicates that adolescents may use maladaptive strategies such as using internet excessively to deal with their depression, anxiety, and stress and hence getting addicted to internet. The researchers want to study how poor mental health and ways of coping can lead to internet addiction among the adolescents and explore the correlation between these factors. There are number of studies which show that people with Internet addiction find it difficult to control their emotions, impulses and/or behaviours in comparison to average Internet users (Lee & Nam, 2004; Niemi, Griffiths & Banyard, 2005).

Some researchers have given evidence of children having an attention control problem who may lack in planning, strategic flexibility, working memory, and the self-monitoring of behaviour (Cepeda, Cepeda, & Kramer, 2000; Sergeant, 2000). This may lead to poor control and regulation with respect to their Internet use (Koo & Kwon, 2014). There are studies which emphasized the role of individual's temperament and character such as novelty-seeking and obsessive traits are recognized risk factors for substance addiction (Hampson, Andrews & Barckley, 2008; Wills & Cleary, 1999) as well as Internet addiction (Ko et. al, 2006; Lin & Tsai, 2002). It is important to note here that individuals with a high level of the harm-avoidant/dependent trait are relatively at high risk of Internet addiction than other factors. There are emotions/mood variables such as anger/aggression which has been found to be linked largely with substance addiction (Gerra et.al. 2004) also predictive of Internet addiction (Harman et. al, 2005; Ko et.al, 2009).

There are adaptive and maladaptive strategies to deal with the high level of stress. Numerous research studies show that non-addicted Internet users often took part in various positive coping strategies such as engaging in leisure or club activities, in comparison to internet addicted (Joh, 2003; Lin, Lin & Wu, 2009). Adolescents who had less varied stress coping strategies seemed to be more susceptible to internet addiction because they dogmatically used the Internet as a way of releasing their stress. People who use avoidant coping strategy get trapped in a vicious cycle of exposure to a negative emotional state, which in turn leads to repetitive Internet use (Koo & Kwon, 2014). Hence, it is important to provide education to students, teachers and parents about uses, misuses and abuses of Internet. This can help students to engage in alternative leisure activities and to develop positive or adaptive alternatives to deal with stress, anxiety and other mental health problems.

Present era has witnessed manifold growth in usages of the internet. Today it has become an essential part of the people if they really need to be at par with the others. No doubt that there are many benefits of the internet in our lives like using for infotainment, assisting in education and work, etc. Yet, we can't deny the negative consequences of excessive internet use especially on the tender mind of the youth. The excessive usage of internet use is leading

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to internet addiction and that is why the medical fraternity has added this as a disorder which is known as “Internet Addiction Disorder (IAD)” in the literature and diagnostic manuals. The main reason for adding this into psychological disorder is because of its negative effects on mental health and human behaviour. So it becomes imperative to explore it further and gather strong research information about how adolescents are coping with present day stress and anxieties, and relationship between coping and internet addiction or internet addiction and mental health problems and come out with strategies and suggestions to deal with internet addiction and mental health of the adolescents and making them develop adaptive coping strategies.

### *Operational definitions*

1. **Internet addiction:** Internet addiction (IA) is a new disorder described in 1996 by the psychologist Dr. Kimberly Young. It involves excessive Internet use to the extent that it interferes with daily life of the individual. Excessive use may be determined by losing track of time, neglecting basic needs such as hunger and sleep, withdrawal symptoms, and negative behaviours including anger, fatigue and social isolation.
2. **Mental Health Problems:** In the present research, the Depression Anxiety Stress Scales (DASS), a measure of mental health problems focusing on the three traits of depression, anxiety and stress is used to assess the mental health of the adolescents.
3. **Ways of Coping:** Coping is used here as adolescents’ ways of dealing with stress. There are adaptive/positive strategies such as confrontive coping, distancing, escape-avoidance and self- controlling and maladaptive/negative strategies which includes accepting responsibility, planful problem solving, seeking social support and positive reappraisal.
4. **Adolescents:** The present study includes students from 9<sup>th</sup> grade to 12<sup>th</sup> grade in the category of adolescents (age range approximately is 14-18 years of age).

### *Purpose of the study*

The aim of the present study is to see the extent and intensity of internet addiction and its relation with the mental health and ways of coping among the adolescent students.

The objectives are as follows:

1. To study internet addiction, mental health problems (depression, anxiety and stress) and ways of coping among adolescents.
2. To find out gender differences in internet addiction, mental health problems (depression, anxiety and stress) and ways of coping among adolescents.
3. To study the relationship between internet addiction and mental health problems (depression, anxiety and stress) among adolescents.
4. To study the relationship between internet addiction and ways of coping among adolescents.
5. To study the relationship between mental health problems (depression, anxiety and stress) and ways of coping among adolescents.

## **METHODOLOGY**

### *Sample*

The sample consisted of 346 high school students from 9<sup>th</sup> to 12<sup>th</sup> grade, with 185 males and 181 females.

**Table 1. Sample characteristics**

Grade	Male	Female	Total
9 <sup>th</sup>	40	32	72
10 <sup>th</sup>	57	43	100
11 <sup>th</sup>	31	38	69
12 <sup>th</sup>	57	48	105
<b>Total</b>	185	181	346

**Tools**

1. **Young's Internet Addiction Test (IAT)**. It has been developed by Dr. Kimberley Young in 2004 to assess internet addiction. It consists of 20 questions wherein each item is scored using a five-point Likert scale which scored from 1 (rarely) to 5 (always) measuring mild, moderate and severe levels of internet addiction. The score range was between 20 to 100 and higher scorers indicate more dependency to the internet. It covers the degree to which internet use affect daily routine, social life, productivity, sleeping pattern, and feeling. The instrument has exhibited good psychometric properties in previous researches. The reliability for this questionnaire is 0.899 in Cronbach's alpha the higher the score the greater the level of internet addiction (Pui, 2006).
2. **Depression Anxiety Stress Scales (DASS)** is a measure of mental health related problems focusing on the three traits of depression, anxiety and stress. The DASS was designed by Syd Lovibond and Peter Lovibond at the University of New South Wales in 1995. The test consists a list of 21 symptoms (Short version), each of which is to be rated on a four-point scale of how much you had that symptom in the last week. The DASS quantifies psychological distress along the dimensions of depression, anxiety, and stress. It does not give a clinical diagnosis. Depression and anxiety have ranges of severity and the DASS describes these ranges. For example, someone scoring a "mild" result has more symptoms than average in the population but is probably still below the typical severity of someone seeking help (i.e. "mild" does not mean a mild level of disorder).
3. **Ways of Coping Questionnaire (WAYS)** was selected to identify the thoughts and actions the participants used to cope with a specific stressful situation. The WAYS is a likert-type a (four-point scale) self-report instrument which consists of 50 items (plus 16 fill items) within eight empirically derived scales (Folkman & Lazarus, 1988). It measures eight types of coping; confrontive coping, accepting responsibility, distancing, escape-avoidance, self- controlling, planful problem solving, seeking social support and positive reappraisal.

Reliability of the instrument was evaluated by examining its internal consistency. Cronbach's coefficient alpha ranged from 0.61 to 0.79 (Folkman & Lazarus, 1988). In this study Cronbach's coefficient alpha ranged from 0.61 to 0.74. Participants were asked to respond to the items by indicating the frequency with which each strategy was used in the situation with 0 indicating "not used," 1 indicating "used somewhat," 2 indicating "used quite a bit," and 3 indicating "used a fair bit". Scores were calculated by summing the respondent's responses to the items that comprise each scale. This provided a summary of the extent to which each type of coping was used. High scores indicate that the person often used the behaviours described by that scale in coping with the stressful event.

**RESULTS AND DISCUSSION**

A total number of 346 adolescents from grades 9-12 participated in this study. The participants were given Internet addiction (IA), DASS and Ways of coping tools and data was analysed by using descriptive statistics, correlation and ‘t’ test. Table 2 below is showing the extent or severity of Internet addiction among adolescents. Only 35.83% of adolescents are showing normal internet usage whereas a significantly high number comes under the mild (36.41%) and moderate (26.01 %) category of Internet addiction which we need to be concerned about. On comparison of males and females, it was found that females show higher addiction (mild = 38.50 %) than their counterparts (mild = 34.59 %) whereas in moderate internet addiction males (26.48%) were higher than the females (25.46%). There is no significant difference between the males and females with regard to internet addiction.

**Table 2: Internet Addiction among adolescents (N=346)**

	Mean	SD	‘t’ Value	Significance	Internet Addiction			
					Normal	Mild	Moderate	Severe
<b>Male (n=185)</b>	36.74	18.38	0.96	0.34 NS	37.83%	34.59%	26.48%	1.08%
<b>Female (n=161)</b>	38.75	19.36			33.54%	38.50%	25.46%	2.48%
<b>Total (n=346)</b>	37.68	18.84			35.83%	36.41%	26.01 %	

\* Significant at 0.05 level of significance (P<0.05),

\*\* Significant at 0.01 level of significance (P<0.01),

NS - Not Significant

**Table 3: Mental Health Problems among Adolescents (N=346)**

Variable		Mean	SD	Mental Health Problems						
				‘t’ value	significance	Normal	Mild	Moderate	Severe	Extremely Severe
<b>Depression</b>	Male n=185	11.65	8.34	2.56	0.01*	46.48%	14.59%	25.94%	7.02%	5.94%
	Female n=161	14.21	9.34			33.54%	20.49%	22.98%	12.42%	10.55 %
	<b>Total N=346</b>	12.84	8.90			40.46%	17.34%	24.56%	9.53 %	8.09 %
<b>Anxiety</b>	Male n=185	10.30	6.98	3.38	0.00*	34.05%	15.67%	28.10%	11.35%	10.81 %
	Female n=161	13.21	8.52			22.98 %	10.55 %	27.56%	11.89%	21.11 %
	<b>Total N=346</b>	11.65	7.86			28.90 %	13.29 %	29.76%	12.42%	15.60 %
<b>Stress</b>	Male n=185	13.90	6.67	6.87	0.00*	62.70 %	14.59 %	16.75%	5.40 %	0.28 %
	Female n=161	19.47	8.14			30.43 %	18.63 %	27.32%	18.01%	5.59 %
	<b>Total N=346</b>	16.49	7.89			47.68 %	16.47 %	21.67%	11.27%	2.89 %

\* Significant at 0.05 level of significance (P<0.05),

\*\* Significant at 0.01 level of significance (P<0.01),

NS - Not Significant

Table 3 above reveals the severity level of the mental health which is measured by Depression, Anxiety and Stress Scale (DASS). Only 40.46% adolescents show no symptoms of depression whereas 17.34 % have shown the mild and 24.56 % moderate symptoms of depression. There are also adolescents which show severe (9.53 %) and extremely severe

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(8.09 %) symptoms of depression which may need the immediate attention of the caregivers and family members. Comparatively, females have shown more symptoms of mild depression (20.49 %) severe (12.42 %) and extremely severe (10.55 %) than the males. Males have higher number of moderate symptoms (25.94 %) of depression than the females (22.98 %).

On the dimension of Anxiety, only 28.90 % adolescents show no symptoms whereas 71.10 % show mild to severe symptoms of anxiety. Overall, females have shown more anxiety symptoms than the male adolescents. On the dimension of the stress also females are showing significantly high symptoms of stress than the boys in the all the category of severity from mild to extremely severe. Findings indicate significant gender difference in depression, anxiety and stress among the adolescents.

**Table 4: Ways of coping among adolescents**

Rank/Order	Ways of Coping (N=317)	Mean	SD
1	Accepting Responsibility (AR)	14.17	3.86
2	Positive Reappraisal (PR)	13.80	3.25
3	Planful Problem Solving (PPS)	13.80	3.72
4	Self-Controlling (SC)	13.10	3.16
5	Seeking Social Support (SSS)	11.84	4.74
6	Confrontive coping (CC)	11.70	3.30
7	Distancing (D)	11.21	3.54
8	Escape- Avoidance (EA)	10.31	3.64

Table 4 reveals that most of the adolescents use accepting responsibility (mean=14.17) as a coping strategy to deal with the stressful events, followed by positive reappraisal (mean=13.80) and planful problem solving (mean=13.80). Self-controlling and seeking social support are at the 4<sup>th</sup> (mean=13.10) and 5<sup>th</sup> (11.84) order respectively. Confrontive coping (mean=11.70), distancing (mean=11.21) and escape avoidance (=10.31) are the least preferred strategies used by the adolescents.

**Table 5: Relationship between Internet addiction, Mental health problems and Ways of coping**

	IAT	Depression	Anxiety	Stress	AR	PR	PPS	SC	SSS	CC	D	EA
<b>IAT</b>	1											
<b>Depression</b>	.326**	1										
<b>Anxiety</b>	.320**	.438**	1									
<b>Stress</b>	.344**	.499**	.522**	1								
<b>AR</b>	0.102	.132*	0.092	.233**	1							
<b>PR</b>	-0.160**	-.223**	-.147**	-.125*	-.136*	1						
<b>PPS</b>	-0.134*	-0.141*	-.143*	-.184**	-.355**	0.110	1					
<b>SC</b>	-0.015	.116*	0.044	-0.068	-.170**	-0.082	0.104	1				
<b>SSS</b>	-0.058	-0.073	-0.074	0.026	-0.018	-.105	-.224**	-.403**	1			
<b>CC</b>	0.067	0.025	0.002	0.045	-.222**	-.211**	-.155**	-.190**	-.115*	1		
<b>D</b>	0.003	-0.020	-0.024	-0.100	-.155**	-.122*	-.179**	0.068	-.318**	-0.045	1	
<b>EA</b>	-0.050	-0.008	0.030	0.013	0.013	-0.025	0.028	-0.006	-0.070	0.048	-0.006	1

\*\**. Correlation is significant at the 0.01 level (2-tailed).*

\**. Correlation is significant at the 0.05 level (2-tailed).*

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Note: Accepting Responsibility (AR), Positive Reappraisal (PR), Planful Problem Solving (PPS), Self-Controlling (SC), Seeking Social Support (SSS), Confrontive coping (CC), Distancing (D), Escape- Avoidance (EA)

Table 5 reveals the Pearson correlation among internet addiction, mental health (depression, anxiety and stress) and eight different strategies of coping measured by ways of coping questionnaire (WAYS). The Pearson correlation coefficient computed between Internet addiction and depression ( $r = .326^{**}$ ), internet addiction and anxiety ( $r = .320^{**}$ ), and internet addiction and stress ( $r = .344^{**}$ ) are found to be positive which is significant at 0.01 level. There is also positive correlation found between depression, anxiety and stress. Whereas coping strategies do not show any significant correlation with internet addiction except the positive reappraisal ( $r = -.160^{**}$ ) and planful problem solving ( $r = -.134^*$ ) which show negative correlation. The coping strategies of self-controlling ( $r = .116^*$ ) and escape avoidance ( $r = .132^*$ ) show positive correlation with depression whereas positive reappraisal ( $r = -.160^{**}$ ) and planful problem solving ( $r = -.223^{**}$ ) show negative correlation. Coping strategies do not show the any significant correlation with anxiety except the positive reappraisal ( $r = -.147^{**}$ ) and planful problem solving ( $r = -.143^*$ ) which show negative correlation. Thus, it can be seen that the coping strategies of positive reappraisal and planful problem solving have strong implications for internet addiction, depression and anxiety.

### CONCLUSION

Majority of adolescents are found to have internet addiction. Undeniably, Internet addiction is a global mental health problem (Chou & Hsiao, 2000). Internet addiction was found to be different between males and females that could be due to increased Internet availability and cultural differences of dealing with stressful events. Epidemiological studies showed that the international prevalence rate of adolescent internet addiction ranged from 0.9% to 38% (Xu et al., 2012) which is also supported by the present study. Alarmingly, in this study 64.17% met the criteria for internet addiction.

Internet Addiction was also associated with poor levels of mental health which was shown by the high level of percentage in symptoms of depression, anxiety and stress, supporting previous findings regarding the relationship between Internet addiction and depression and other comorbid disorders (Mueller, Beutel & Woelfling, 2014; Morrison & Gore, 2010; Leung, 2006). In studies of students indicating excessive use of internet and mental health (Chou & Hsiao, 2000; Chen & Peng, 2008) results indicated that the level of depression, stress, suicide intention, hyperactivity, fear, social fear, aggression, violence and antisocial behaviors occur more in students with internet addiction. Chang & Hung (2008) stated that the internet is used by these people as a medium for avoiding and dealing with these underlying problems. However, as claimed by Chang & Hung (2008) the mental health problems and psychological problems are the core issues in internet addiction use itself. The present study has found a high and positive correlation of Internet addiction with depression, anxiety and stress. However, further researches can be conducted to explore the relationship of internet addiction with mental health problems and psychological problems.

Researchers agree that coping mechanisms can be generally divided into two broad categories; problem-focused coping and emotional-focused coping (Gold and Thornton, 2001; Payne, 2001; Yancik, 1984). Present study does not show any significant correlation with internet addiction except the positive reappraisal ( $r = -.160^{**}$ ) and planful problem solving ( $r = -.134^*$ ) which show negative correlation. Problem-focused coping seeks to change the stressful event, whereas emotional-focused coping is directed at changing the

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way one perceives the stressful situation. The coping strategies that is self-controlling ( $r = .116^*$ ) and escape avoidance ( $r = .132^*$ ) show positive correlation with depression whereas positive reappraisal ( $r = -.160^{**}$ ) and planful problem solving ( $r = -.223^{**}$ ) which show negative correlation. With anxiety, coping strategies do not show any significant correlation except positive reappraisal ( $r = -.147^{**}$ ) and planful problem solving ( $r = -.143^*$ ) which show negative correlation. Ultimately, the chosen coping mechanism depends on the individual, his/her resources and the type of stressor. It is also not uncommon for a combination of these mechanisms to be used for any given stressor (Lazarus and Folkman, 1984).

The findings of the present study indicate that using more of adaptive strategies such as positive appraisal and planful problem solving reduces the unhealthy way of internet usages which is reiterated by many studies (Joh, 2003; Koo & Kwon, 2014; Lin, Lin & Wu, 2009) and reduces depression as well as anxiety. Whereas coping strategies like self-controlling and escape avoidance were found ineffective in dealing with depression, anxiety and internet usages. The result of the present study indicates that adolescents use maladaptive strategies such as using internet excessively to deal with their depression, anxiety, and stress and hence getting addicted to internet. Adolescents who are using adaptive strategies are able to deal better with difficult situation in their life and deal effectively with depression, anxiety, stress and other mental health problems and hence depend less on using internet as a way to cope.

### **Recommendations**

Findings indicate that there is an urgent need to create awareness and should be pursued to a wide range including parents, teachers or educationists and students. In line with earlier findings, this is required to start with prevention programme along with proper screening, referrals for getting diagnosis, planning effective treatment and management. Workshops, seminars, etc. Needs to be organised to impart the information about the right and appropriate usage of internet and its disadvantages. School authorities can play a crucial role in adding information services to the “student guidebook for effective and harmless use of internet” instead of just putting a blanket ban or putting these in the rules and regulations book or school diaries. A mental health or wellness programs should be initiated along with the extracurricular activities which can take care of students’ mental and physical health as well. It is important to include family, peer, and school interactions into future studies and interventions. Future researches may use different methods of inquiry particularly on a causal perspective and pursue the study to a wider population and different target groups.

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